REMARKS

Reconsideration of the application is respectfully requested for the following reasons:

1. Amendments to Claims

Claim 4 has been amended to positively define variable μ, as required in item 1 on page 2 of the Official Action, with a corresponding amendment to page 5 of the specification. It is respectfully submitted that the amendment does not involve **new matter** since the use of μ as a "weighting factor" is well-known from standard regression analysis.

The remaining changes are the cancellation of claims 6-9 and minor grammatical and idiomatic changes to claims 1 and 2. These changes also do not involve **new matter**.

2. Rejection of Claims 1-3 and 6-9 Under 35 USC §103(a) in view of U.S. Patent No. 6,678,657 (Bruckner) and Admitted Prior Art

This rejection is respectfully traversed on the grounds that the Bruckner patent fails to disclose or suggest application of sub-band partitioning to noise reduction, as recited in claim 1, and in particular the claimed steps of estimating SNR of an i-th sub-band, determining an over-subtraction factor of the sub-band based on estimated SNR, and determining a clean speech estimate by performing, "**on each sub-band**," a spectral subtraction.

The Bruckner patent teaches noise reduction by subtraction of estimated noisy spectral magnitude from the noisy spectral magnitude, *i.e.*, spectral subtraction, **but this spectral subtraction does not involve sub-band partitioning**, as claimed. Instead, Bruckner only uses **sub-band partitioning** for the interpolation operation that ***follows*** noise reduction, which is a well-known technique. Furthermore, performing estimation and spectral subtraction on a sub-band by sub-band basis is not admitted to be "prior art."

It is well-known to use over-subtraction of the noise spectrum in order to reduce a musical noise effect. **However, the over-subtraction factor is conventionally determined by the SNR of the processing frame (the Admitted Prior Art), rather than the SNR of a sub-band for a frame, as claimed**. Neither Bruckner nor the Admitted Prior Art suggests determining the over-subtraction factor based on the SNR ***of a sub-band*** for a frame, rather than for the processing frame itself.

The result of the sub-band determination is that the claimed invention provides multiple over-subtraction factors, one for each sub-band, to reduce the speech distortion relative to the conventional frame-based over-subtraction, resulting in a substantial performance improvement (see the table on page 8, which lists an approximately **40%** improvement at 15dB input SNR). Thus, the use of sub-band determination can hardly be considered to be a matter of design choice, and would not have been suggested to the ordinary artisan by any reasonable combination of the Admitted Prior Art and the Bruckner patent. Withdrawal of the rejection of claims 1-3 under 35 USC §103(a) is therefore respectfully requested.

Having thus overcome each of the rejections made in the Official Action, expedited passage of the application to issue is requested.

Respectfully submitted,

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